

CLAIMS

What is claimed is:

1. A roller assembly for use in agricultural machinery, said assembly comprising,
an exterior portion adapted to support a conveyor element, said exterior portion having a
receiving hole about a central axis thereof and a groove in said receiving hole about the central
axis; and

a bearing sub-assembly positioned within the exterior portion about the central axis
thereof, said sub-assembly comprising,

at least one bearing;

at least one sealing element positioned outboard of each side of the bearing,
wherein said sealing element on one side of the bearing has an elastomeric sealing
portion and the sealing element on the other side of the bearing is formed as an
elastomeric plug with outward circumferential surfaces that are inclined with respect to
one another and that intersect to form a point, wherein the groove in said exterior portion
is adapted to receive the point therein; and

at least one standoff also positioned outboard of the bearing, the standoff having
groove positioned on an outer surface thereof, said groove being adapted to receive the
elastomeric sealing portion therein.

2. The roller assembly of claim 1, wherein the elastomeric plug contains a recess
adapted to accommodate the head of a bolt positioned along the central axis.

3. The roller assembly of claim 1, wherein the outward circumferential surfaces of
2 the plug have an angle of about 1 degree to about 60 degrees with respect to the axis.

4. The roller assembly of claim 1, wherein the outward circumferential surfaces of
2 the plug have an angle of about 5 degrees to about 50 degrees with respect to the axis.

5. The roller assembly of claim 1, wherein the outward circumferential surfaces of
2 the plug have an angle of about 8 degrees to about 40 degrees with respect to the axis.

6. The roller assembly of claim 1, wherein the outward circumferential surfaces of
2 the plug have an angle of about 12 degrees to about 36 degrees with respect to the axis.

7. The roller assembly of claim 1, wherein the outward circumferential surfaces of
2 the plug are rounded.

8. The roller assembly of claim 1, wherein the diameter of the plug is about 0.01 mm
2 to about 8 mm larger than the diameter of the receiving hole in the hub.

9. The roller assembly of claim 1, wherein the diameter of the plug is about 0.05 mm
2 to about 6 mm larger than the diameter of the receiving hole in the hub.

10. The roller assembly of claim 1, wherein the diameter of the plug is about 0.1 mm
2 to about 5 mm larger than the diameter of the groove in the receiving hole in the exterior portion.

11. The roller assembly of claim 1, wherein the diameter of the plug is about 0.2 mm
2 to about 4 mm larger than the diameter of the groove in receiving hole in the exterior portion.

12. The roller assembly of claim 1, wherein the plug makes a compression fit with the
2 exterior portion.

13. The roller assembly of claim 1, wherein the horizontal length of the standoff may
2 be chosen so as to offset the exterior portion of the roller assembly a predetermined distance with
respect to the conveyor element.

14. A roller assembly for use in agricultural machinery, said assembly comprising;
2 an sprocket portion adapted to support a conveyor element;
a hub positioned within the sprocket portion about a central axis thereof, said hub having
4 a groove formed on an inner surface thereof; and
a bearing sub-assembly positioned within the hub about a central axis thereof, said sub-
6 assembly comprising;
at least one bearing;
8 at least one sealing element positioned outboard of each side of the bearing,
wherein said sealing element on one side of the bearing has an elastomeric sealing

10 portion and the sealing element on the other side of the bearing is formed as an
elastomeric plug with outward circumferential surfaces that are inclined with respect to
12 one another and that intersect to form a point, wherein the groove in said hub is adapted
to receive the point therein; and
14 at least one standoff also positioned outboard of the bearing, the standoff having
groove positioned on an outer surface thereof, said groove being adapted to receive the
16 elastomeric sealing portion therein.

15. The roller assembly of claim 12, wherein the elastomeric plug makes a
2 compression fit with the hub.

16. The roller assembly of claim 15, wherein the elastomeric plug contains a recess
2 adapted to accommodate the head of a bolt positioned along the central axis of the hub.

17. The roller assembly of claim 14, wherein the horizontal length of the standoff
2 may be chosen so as to offset the roller assembly a predetermined distance with respect to the
conveyor element.

18. The roller assembly of claim 17, wherein the sprocket portion contains teeth that
2 engage rods on the underside of a conveyor element.